

## CLAIMS

1. Method for measuring the degree of fibre concentration in a pulp inside a machine (1), in particular a refiner for the manufacture of paper pulp, which machine (1) comprises a stator (5) and an opposing rotor (3),  
5 which form a grinding gap (6) for the pulp, with the stator (5) being provided with at least one sensor device (7), designed to interact with a rotor surface and comprising an impedance meter body (10) with a sensor surface (18), which impedance meter body (10) is mounted in the stator (5) in such a  
10 way that it can move axially, characterized in that measurements of the impedance between the rotor surface and the sensor surface (18) are carried out during an axial movement of the impedance meter body (10) and in that the measured impedance differences are utilized together with the size of the movement to determine the dielectric constant of the pulp, from which the  
15 degree of fibre concentration of the pulp is derived.
2. Method for measuring the degree of fibre concentration according to Claim 1, characterized in that the size of the movement is measured using a measurement device (21) that communicates with the impedance meter body  
20 (10).
3. Method for measuring the degree of fibre concentration according to Claim 1 or 2, characterized in that the size of the grinding gap (6) is also measured and the value of this is utilized in determining the dielectric  
25 constant of the pulp.
4. Sensor device (7) for measuring the degree of fibre concentration in a pulp inside a machine (1), in particular a refiner for the manufacture of paper pulp, which machine (1) comprises a stator (5) and an opposing rotor (3),  
30 which form a grinding gap (6) for the pulp, which sensor device (7) is designed to be mounted in the stator (5) to interact with a rotor surface and comprises an impedance meter body (10) with a sensor surface (18), which impedance meter body (10) is movable in an axial direction and is connected to an operating mechanism (13) for axial movement relative to the housing  
35 (11), characterized in that the impedance meter body (10) is arranged to measure the impedance between the sensor surface (18) and the rotor surface during axial movement thereof and in that the measured impedance differences are utilized together with the size of the movement of the

impedance meter body (10) to determine the degree of fibre concentration in the pulp.

5        5.        Sensor device (7) according to Claim 4, characterized in that  
essentially the whole of the impedance meter body (10) is clad with an  
insulating material (19).

6.        6.        Sensor device (7) according to Claim 3 or 4, characterized in that a  
measuring device (21) communicates with the impedance meter body (10)  
10        for measuring the axial movement thereof.

7.        7.        Sensor device (7) according to any one of Claims 5 or 6,  
characterized in that the impedance meter body (10) is also arranged to  
measure the size of the grinding gap (6).

15        8.        8.        Sensor device (7) according to any one of Claims 5 or 6,  
characterized in that the sensor device (7) also comprises a distance meter  
body (9), separate from the impedance meter body (10) and arranged to  
measure the size of the grinding gap (6).